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Applicant : Carlo Neri
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Examiner : JOSEPH DAVID ANTHONY
TITLE : MIXTURES OF ADDITIVES
FOR ORGANIC POLYMERS IN
GRANULAR FORM
Docket No. : GRLK-P121-US
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August 1, 2005

By 
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REPLY BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
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Applicants submit their Reply Brief in appeal of their ex parte patent application referenced above responding to the Examiner's Answer dated May 31, 2005.

Corrected Claims Appendix

In the course of preparing this Reply Brief, applicants identified errors in the claims as submitted in the Claims Appendix that occurred during the course of prosecution that have carried forward.

The identified errors are in claim 2 and in claim 11.

In an amendment to claim 2 in response to the First Office Action, the word "phosphite" appearing in the patent application as filed was changed to "phosphate". No explanation or comment accompanied the amendment addressing this change. The change was not accompanied with strike-through or underlining according to 37 CFR §1.121(c)(2).

In the same amendment, the term "methine" in claim 11 became "methane". Again, no explanation or comment accompanied the amendment addressing this change. The change was not accompanied with strike-through or underlining according to 37 CFR §1.121(c)(2).

Applicants submit that in each case these changes are errors and were not intended to be amendments to the claims.

Attached to this Reply Brief is a Corrected Claims Appendix wherein the errors referenced above are corrected.

Although it may be unusual at the stage of appeal that such errors be addressed, applicants request that the Corrected Claims Appendix be considered and adopted as the claims on appeal.

"New Matter" Rejection

The Reply Brief argues Applicants' specification as filed lacks an upper temperature range for the claimed extrusion process. Reply Brief, p. 10. The claims, as originally filed, comprise a part of the specification. *In re Gardner* 475 F.2d 1389, 1391, 177 USPQ 396 (CCPA, 1973); MPEP 2163 I. Claim 1 as originally filed provides in significant part that "the lowest melting of said components [the antecedent for 'said components' being stabilizer, pigment, dye or bleaching agent] act as gluing agent for the remaining components".

An upper limit is provided by the statement that the remaining components are 'glued'. If the components not having "the lowest melting [point]" were melted, then they would not be 'glued' by "the lowest melting of said components".

The position taken in the Reply Brief is inconsistent with the literal language of claim 1.

Rejections based on 35 USC §102 (b)

A. Applicable Law

Pending claims 1-6, 8-14 and 18-21 stand rejected as anticipated by cited prior art. The Examiner's Answer urges that the form of the pending claims requires that applicants show "distinctiveness, criticality, superior or unobvious results". Examiner's Answer, p. 5 – 6.

The Examiner's Answer provides no support for the quoted requirement, and applicants submit no such support exists. The claims do not stand rejected for obviousness pursuant to 35 USC 103(a), but stand rejected for anticipation pursuant to 35 USC 102(b). To reject claims as anticipated, each, and every claim limitation must be found in a single prior art reference.

A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.

In re Paulsen 30 F.3d 1475, 1478-0, 31 USPQ2d 1671, 1673 (Fed.Cir., 1994).

The instant claims are product claims, including process steps. Thus, anticipation requires that if a prior art product is made by a different process, that the product of the instant claims be 'the same as' the prior art product. *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed.Cir., 1985).

If the product in a product-by-process claim is the same as . . . a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Id. at 697.

The assertion in the Examiner's Brief that the applicant must show "distinctiveness, criticality, superior or unobvious results" is misplaced, unsupported, and wrong. The cited prior art does not anticipate the instant claims unless it is applied consistent with the applicable law.

B. US 5,455,288 to Needham

The first substantive Office Action and Examiner's Answer urges Example 1 of the '288 reference discloses a product that anticipates the claimed invention.

Example 1 of '288 discloses pigment, particulated resin, binder, zinc stearate, UV stabilizer and antioxidant. Col. 5, lines 51 – 55. The ingredients are blended with temperature increased to 150°F. The role of the binder is disclosed at Col. 5, lines 3 – 10.

Advantageously, the degree of agitation and blending time are selected to ensure adequate mixing of the binder, pigment and other constituents, and sufficient heat to produce a dustless, mix. When friction heat is used, a uniform mixture is generally produced **by the time the binder melts**. Typically a commercially available ribbon blender can handle a batch up to about 500 pounds in about 30 minutes or less.
'288, Col. 5, lines 3. – 10 (emphasis added).

Additional references to the role of the binder include Col. 3, lines 36 – 49; Col. 4, lines 56 – 58.

The '288 reference discloses a means of generating a dustless combination that requires the presence of a 'binder' to produce "a dustless mixture of individual resin particles coated with pigment and binder". (Col. 2, lines 13 – 14).

Applicants' independent claim 1 concerns:

. . . one or more stabilizers for organic polymers; plus one or more organic or inorganic pigments; and/or one or more dyes or bleaching agents; obtained by extrusion at a temperature capable of enabling the partial or total melting of the lowest-melting of said components, the molten part of which, on solidifying, act as gluing agent for the remaining components

Thus in applicants' claims, it is one of: stabilizers, or pigments, or dyes, or bleaching agents that is "the lowest-melting of said components". The instant claims provide that it is the "lowest-melting of said components . . . [that] act as gluing agent for the remaining components". There is no teaching in the '288 reference that the 'binder' is a stabilizer, a

pigment, a dye, or a bleaching agent as the terms are used in the instant claims. While the '288 reference may describe "granules including individual resin particles beneficially coated with binder and pigment" (Col. 1, lines 64 – 66), no office action, nor the Examiner's Reply, has identified a teaching in the '288 reference where the gluing agent is one of: stabilizers, or pigments, or dyes, or bleaching agents according to the claims.

The '288 reference does not describe a product which "is the same as" the claimed invention. Consequently the rejection of claims as anticipated by the '288 reference is improper and must be reversed.

C. US 5,888,254 to Gäng et al.

The first substantive Office Action urges all examples of the '254 reference anticipate the claimed invention. The Final Office Action is likewise no more specific. The Examiner's Answer for the first time specifies example 8 as anticipating the claimed invention.

The '254 example 8 discloses the preparation of granules from an aqueous solution of 23wt% dye, and 5wt% NaOH and ascorbic acid. Following the process of example 7 referenced by example 8, the components are apparently precipitated from aqueous solution, and concentrated to dryness at 120°C and under vacuum. The Examiner's Answer states Example 8 contains anticipating disclosure including "2) sodium hydroxide (reads on applicants' claimed stabilizer component of claim 1, . . .)".

Applicants find hydroxides mentioned on p. 21 of the specification, line 4, among a listing of "Fillers and reinforcing agents". Notwithstanding the statement in the Examiner's Answer, applicants do not find sodium hydroxide identified among the description of the claimed "stabilizers for organic polymers". If it is the position taken in the Examiner's Answer that sodium hydroxide is a 'stabilizer' notwithstanding that it is not included as a stabilizer in

applicants' specification, then no reference supports the proposition, and no support according to 37 CFR §1.104(d)(2) is provided.

Moreover, no reference is made to a melt of one of: stabilizers, or pigments, or dyes, or bleaching agents that is "the lowest-melting of said components", or to gluing with said melt of other components

Accordingly, the '254 reference does not describe a product which "is the same as" the claimed invention. Consequently the rejection of claims as anticipated by the '254 reference is improper and must be reversed.

D. US Patent 4,729,796 to Deubel et al.

The substantive office actions and the Examiner's Answer identify example 1 of the '796 reference as anticipating applicants' claims.

Example 1 discloses preparation of a granulate comprising a pigment, a resin, and an antioxidant component. The components are in an aqueous solution prior to forming a granular material. This '796 reference also appears to form a precipitate from a solution. The resin, colophony (softening point 73°C), is soluble in water. Col. 1, lines 38 – 39. The granular material is dried after filtering off the water.

The instant claims do not admit a "carrier". Colophony is defined as "[a] rosin residue that remains after the volatiles have been removed by distillation of crude turpentine from any of the *Pinus* species."¹

The '796 reference provides a granule of pigment, carrier, and antioxidant is obtained as a solid from the liquid solution. The instant claims call for one of stabilizers, pigments, dyes or

¹ Hawley's Condensed Chemical Dictionary, 14th ed., John Wiley & Sons, Inc., New York, 2001.

bleaching agents to "act as a gluing agent for the remaining components". So far as applicants can determine, a gluing agent is not identified in the '796 reference that is a stabilizer, a pigment, a dye, or a bleaching agent. The Office Action and the Examiner's Answer do not identify a gluing agent, or discuss how the particulate of '796 is bound.

The '796 reference does not describe a product which "is the same as" the claimed invention. Consequently the rejection of claims as anticipated by the '796 reference is improper and must be reversed.

E. U.S. Patent 5,437,688 to Yamanuchi et al.

The rejection of pending claims in the first substantive Office Action and the Final Office Action, was supported by reference to all examples of the '688 reference. The Examiner's Answer for the first time points to example 1 as anticipating the pending claims. Example 1 discloses 1) an aqueous dye solution; 2) sodium primary phosphate; 3) anhydrous sodium sulfate; 4) an alkyl ester comprising 34 carbon atoms; and 5) a derivative of 3,4-dihydroxy γ -pyran ('688, formula 4, Col. 6, line 55). For the first time in this prosecution the Examiner's Answer urges that "sodium primary phosphate (reads at least on applicants' stabilizer component of claim 1)". (Examiner's Answer, p. 8). The specification describes 'phosphates' among nucleating agents. (p. 20, lines 17-25).

As noted above in this Reply Brief, an error in amending claim 2 in the first substantive Response filed March 25, 2004 was carried forward and included by Applicants in their Statement of Claims with this appeal. This error may be the source of some confusion on the part of the Examiner. Applicants' first recognition of this error occurred in the preparation of this Reply Brief.

Dependent claim 2 as initially presented included the components "stabilizers for organic polymers are selected from the following groups: antioxidants, ultraviolet-ray and light stabilizers, metal-deactivators, *phosphites* and phosphonites, hydroxylamines," (italics added). Dependent claim 2 was amended with the response of March 25, 2004 in other respects. Amendments were identified consistent with 37 CFR §1.121(c)(2) by underlines and strike-through of characters. In the course of preparing dependent claim 2 for the March 25, 2004 amendment, the component "*phosphites*" became "*phosphates*". The change from phosphites to phosphates was not characterized according to Rule 121. No comment addressing changes to dependent claim 2 was included with the response. Applicants submit the change of claim language was unintentional and that claim 2 should not include the term "phosphate".

Since applicants' (correctly presented) claims do not characterize "phosphates" among stabilizers for organic polymers, the characterization in the Examiner's Answer of "sodium primary phosphate" as reading on applicants' stabilizer component is erroneous. If the mentioned typing error resulted in a misapprehension of applicants' description of stabilizers for organic polymers, then applicants apologize for the inconvenience.

Alternatively, if the thrust of the Examiner's Answer is to urge that 'phosphates' are stabilizers for organic polymers, then applicant notes no support for the proposition as identified in any reference of record by any office action.

Anhydrous sodium sulfate is urged by the Examiner's Reply to "(read[] at least on applicants' claimed rheological agent of claim 5)". Examiner's Reply, p. 8.

Applicants describe inorganic sulfates as nucleating agents. (p. 20, lines 17 – 20). So far as applicant can determine, the specification includes no description of sulfates as 'rheological

agent'. No reference of record equates sulfates as 'rheological agents'. If facts within the personal knowledge of the examiner or other employees of the office are relied upon (37 CFR §1.104(d)(2)), such facts are not of record.

Further, the Examiner's Answer applies the sulfate component of the '688 reference to a component of a dependent claim. If the independent claim is novel, correspondence of a component of a dependent claim with the prior art does not anticipate the dependent claim.

Distinguishing the instant claims from the '688 reference is the gluing action of the lowest-melting of a stabilizer, pigment, dye or bleaching agent. The granule prepared according to '688 reference, example 1, is spray dried. Col. 9, lines 46 – 48. No office action has identified, nor does the Examiner's Reply identify a disclosure of melting any component of the '688 reference. No office action, nor the Examiner's Answer, identifies a disclosure of melting the lowest melting of a stabilizer, pigment, dye or bleaching agent component to 'act as a gluing agent for the remaining components' in the '688 reference.

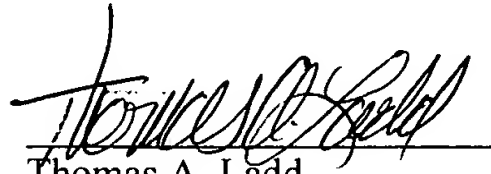
The '688 reference does not describe a product which "is the same as" the claimed invention. Consequently the rejection of claims as anticipated by the '688 reference is improper and must be reversed.

Relief Requested

Applicants seek:

- 1) withdraws of the "new matter" rejection pursuant to 35 USC §112, first paragraph;
- 2) withdrawal of all anticipation rejections pursuant to 35 USC §102(b) over all references of record;

- 3) correction of the claims according to the Amended Claims Appendix submitted with this Reply Brief; and
 - 4) appropriate extension of the patent term from the ordinary term of 20 years from filing date 35 USC §154(a)(2), resulting from the delay caused by this appeal.
- 35 USC §154 (b)(1)(C)(iii).



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AMENDED CLAIMS APPENDIX

1. (Previously Amended) A mixture of additives for organic polymers in granular form comprising:

- one or more stabilizers for organic polymers; plus
- one or more organic or inorganic pigments; and/or
- one or more dyes or bleaching agents;

obtained by extrusion at a temperature capable of enabling the partial or total melting of the lowest-melting of said components, the molten part of which, on solidifying, act as gluing agent for the remaining components,

said inorganic pigments being selected from the group consisting of iron oxides, carbon black, talc, China clay, barites, silicates, and sulfosilicates;

said mixture being devoid of said organic polymers and carriers for said components.

2. (*Corrected*)(Previously Amended) The mixture of additives in granular form according to claim 1, wherein the stabilizers for organic polymers are selected from the group consisting of: antioxidants, ultraviolet-ray and light stabilizers, metal-deactivators, ~~phosphates~~ phosphites and phosphonites, hydroxylamines, nitrons, thiosynergizing agents, agents capable of destroying peroxides, polyamide stabilizers, basic co-stabilizers, nucleating agents, fillers and reinforcing agents, benzofuranones and indolinones.

3. (Previously Amended) The mixture of additives in granular form according to claim 2, wherein the antioxidants are selected from the group consisting of alkylated monophenols, alkylthiomethylphenols, hydroquinones and alkylated hydroquinones, tocopherols, hydroxylated

thiodiphenyl ethers, alkylidenebisphenols, benzyl compounds containing O, N or S, hydroxybenzylated malonates, aromatic hydroxybenzyl compounds, triazine compounds, benzylphosphonates, acylaminophenols, esters of β (3,5-di-t-butyl-4-hydroxyphenyl)propionic acid with monohydric or polyhydric alcohols, esters of β -(5-di-t-butyl-4-hydroxyphenyl)propionic acid with monohydric or polyhydric alcohols, esters of β -(3,5-dicyclohexyl-4-hydroxyphenyl) propionic acid with monohydric or polyhydric alcohols, esters of 3,5-di-t-butyl-4-hydroxyphenyl acetic acid with monohydric or polyhydric alcohols, amides of β -(3,5-di-t-butyl-4-hydroxyphenyl)propionic acid, ascorbic acid, and aminic antioxidants.

4. (Previously Amended) The mixture of additives in granular form according to claim 2, wherein the ultraviolet ray and light stabilizers are selected from the group consisting of derivatives of 2-(2'-hydroxyphenyl)benzotriazoles, derivatives of 2-hydroxybenzophenones, esters of benzoic acids optionally substituted, acrylates, nickel compounds, sterically hindered amines and their N-alkoxy derivatives, oxamides, and 2-(2-hydroxyphenyl)-1,3,5-triazine.

5. (Previously Amended) The mixture of additives in granular form according to claim 2, wherein other additives are present selected from the group consisting, of plasticizers, lubricants, emulsifying agents, rheological additives, catalysts, slip agents, optical brighteners, flame-retardants (bromurates, chlorurates, phosphorates and phosphorous/halogen mixtures), antistatic agents, and blowing agents.

6. (Previously Amended) The mixture of additives in granular form according to claim 1, wherein the organic pigments are selected from the group consisting of organic pigments of the

azo type, azomethines, anthraquinones, perilenes, dioxazines, thioindigo reds, quinacridones, phthalocyanines, blue indanthrones, carbazoles, isoindolinones, isoindolones, benzimidazolinones, and their metal salts.

7. (Cancelled)

8. (Previously Amended) The mixture of additives in granular form according to claim 1, wherein the dyes or bleaching agents, are soluble, insoluble or slightly soluble in water.

9. (Previously Amended) The mixture of additives in granular form according to claim 8, wherein the dyes which are soluble in water are selected from the group consisting of acid dyes, aminoketones, ketone-imines, methines, nitrodiphenylamines, quinolines, aminonaphthoquinones, coumarins, anthraquinones, and azo dyes .

10. (Previously Amended) The mixture of additives in granular form according to claim 9, wherein the dyes which are soluble in water contain one or more anionic groups soluble in water.

11. (*Corrected*)(Previously Amended) The mixture of additives in granular form according to claim 8, wherein the dyes are soluble in water are selected from the group consisting of salts, metal halides, anthraquinones, phthalocyanines, diarylmethane and triarylmethane; methine, polymethine and azomethine; thiazoles, ketone-imines, acridines, cyanines, nitro dyes, quinolines, benzimidazoles, xanthenes, azines, oxazines, thiazines and triazines which have at least one quaternary nitrogen in the molecule.

12. (Previously Amended) The mixture of additives in granular form according to claim 1, wherein the dyes which are insoluble or slightly soluble in water are selected from the group consisting of dyes containing sulfur, disperse dyes and vat dyes.
13. (Previously Amended) The mixture of additives in granular form according to claim 12, wherein the disperse dyes are selected from the group consisting of nitro dyes, aminoketones, ketone-imines, methines, polymethines, diphenylamines, quinolines, benzimidazoles, xanthene, oxazines, aminonaphthoquinones, and coumarins which do not contain carboxylic acid or sulfonic acid groups.
14. (Original) The mixtures of additives in granular form according to claim 12, wherein the vat dyes are those applied to fabrics in dispersed solid form and, after development, are still present in a form which is insoluble in water.
15. (Previously Withdrawn) Use of the mixtures of additives according to any of the previous claims in the stabilization and dyeing of organic polymers.
16. (Previously Withdrawn) Polymeric compositions containing an organic polymer and an effective quantity of one of the mixtures of additives according to any of the previous claims.
17. (Previously Withdrawn) End-products obtained from the processing of the polymeric compositions according to claim 16.

18. (Previously Added) The mixture of claim 10, wherein said anionic groups soluble in water are selected from the group consisting of carboxylic acid groups, sulfonic acid groups, and salts of said carboxylic and sulfonic acid groups.
19. (Previously Added) The mixture of claim 18, wherein said salts are selected from the group consisting of lithium, sodium, potassium and ammonium salts.
20. (Previously Added) The mixture of claim 11, wherein said salts which are dyes soluble in water are selected from the group consisting of chlorides, sulfates, metasulfates and -- onium chlorides, and said metal halides which are dyes soluble in water are tetrachlorozincates of azo dyes.
21. (Previously Added) The mixture of claim 13, wherein said disperse dyes are selected from the group consisting of anthraquinones and azo dyes.